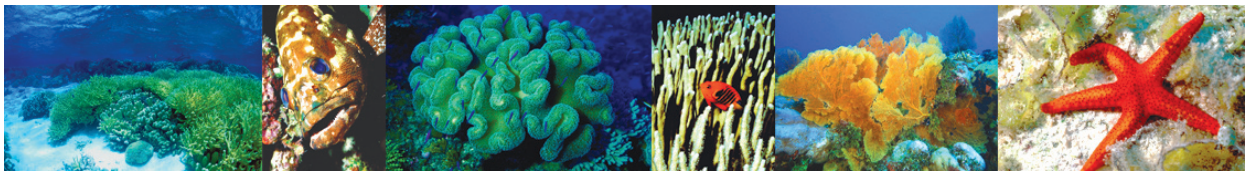
OBIS
OCEAN BIOGEOGRAPHIC INFORMATION SYSTEM
USA



Ocean Biogeographic Information System - USA and U.S. Marine Species on the NBII

Photo credit: Photo by Paul Wang

Green sea turtle, Hawaii.

Background

OBIS-USA is the U.S. regional node of the International Ocean Biogeographic Information System (iOBIS). International OBIS is a global system comprised of a series of regional and thematic nodes that collaborate to provide access to marine biogeographic data. They follow international data standards and operational protocols to facilitate access to and interoperability of data sets. The OBIS program is included under the International Oceanographic Data and Information Exchange of UNESCO's Intergovernmental Oceanographic Commission.

The U.S. National Committee for the Census of Marine Life (CoML) designated the U.S. Geological Survey (USGS) National Biological Information Infrastructure (NBII) as the U.S. regional OBIS node. OBIS-USA was organized by USGS under the NBII as a part of our mission to coordinate the development of the nation's repository for data on our national biological resources. OBIS-USA documents where and when species were observed or collected by bringing together marine biogeographic data from highly distributed data sources. The data are then available for use in understanding species and ecosystems as well as monitoring, evaluating, and forecasting change in our oceans.

By locating OBIS-USA within the NBII, the nation gets a one-stop shop for data on marine species found in U.S. waters or collected by U.S. scientists that:

- Provides a stable location for future data access;
- Reduces OBIS-USA development costs by leveraging the existing information infrastructure; and
- Facilitates integration with freshwater and terrestrial biodiversity data within a national framework of data standards and protocols.

In addition, we have partnered with the Integrated Ocean Observing System (IOOS®) to support this key observational infrastructure and to help address issues that require dynamic, real-time access to remote sources and improved interoperability of data from multiple distributed sources.

OBIS-USA Today

We work with data holders (participants) to understand the best process to transfer the data, review the data prior to their release, and then allow public access. This process of becoming part of the OBIS-USA network frees the participant's resources from providing data to the public and alleviates much of the concern for security since the public does not directly access the participant's computers or the original data sets. Our processes for bringing data into OBIS-USA are designed to capture full data quality while minimizing the burden on participants.

OBIS-USA provides access to a set of data that is as comprehensive — spatially, taxonomically, and temporally — as possible, and then

Photo credit: Census of Marine Life Arctic Ocean Diversity project, © Kevin Raskoff

Clione limacina *(sea angel). The most common naked pteropod of arctic waters.*

allows users to search and acquire individual data sets (or records) of interest. The site is available at obisusa.nbii.gov. The main search mechanism is the *atlas*. Here, users can select data sets of interest and search on key fields (e.g., scientific names). The site also provides summary data about the attributes, quantity, and quality of the data sets. Another key tool is the *data dashboard*, which allows users to view the various attributes of the data (see images). The quality of the data may also be reviewed by using applications that allow viewing of taxonomic depth and duplication of data for each data set.

Photo credit: Gary Cranitch © 2008

Nardoa rosea *sea star as seen from the underside. Photographed during Census of Coral Reef Ecosystems (CReefs) research, Heron Island, Australia.*

This current functionality grew out of expressed participant needs as the system was developed. A second round of functionality is being planned to accommodate additional capabilities that have been identified. These include:

- New query paths into metadata, geography, and taxonomy;
- Interoperability with environmental data; and
- Improved access through Web services.

Future for OBIS-USA

The world's oceans are critically important. They provide food and recreational opportunities; contribute to economic growth and national security; and influence our climate. Healthy oceans and sustainably managed marine resources translate into healthy and prosperous people. For example, economic contributions from marine businesses in 2007 included $255 billion from the coastal leisure and hospitality sector, while fisheries contributed $4 billion.

The Interagency Ocean Policy Task Force is currently developing a policy, framework for coordination, and implementation strategy for addressing our national marine stewardship responsibilities. There are nine priority objectives proposed in the interim report, including ecosystem-based management, spatial planning, and marine and Great Lakes observing.

To address important ocean stewardship challenges such as these requires access to the growing variety of data types that provide information about our oceans, as well as services, tools, and complex data analysis systems to further our understanding of these processes. Such a system will provide legacy and up-to-date data on biodiversity and, ultimately, allow for the capacity to forecast changes in ocean biodiversity in response to environmental changes or resource use. In light of these needs, OBIS-USA is being developed to provide data and tools to meet the challenge of understanding, monitoring, and predicting changes in marine biodiversity and ecosystem function. Through OBIS-USA, the NBII is doing its part to help address these crucial issues.

For More Information

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